

WHAT IS CLAIMED IS:

1. An electrostatic actuator mechanism,  
comprising:

5 a first stator provided with an electrode group  
including at least three electrodes successively  
arranged in a predetermined direction, voltage being  
applied to the electrodes in different order;

10 a second stator arranged to face the first stator  
and provided with a planar electrode extending in the  
predetermined direction;

15 a movable member arranged between the first stator  
and the second stator, and provided with a first  
electrode section facing the electrode group and a  
second electrode section facing the planar electrode;  
and

20 a switching circuit configured to apply voltage  
alternately to the electrode group and the planar  
electrode, the potential of any of the electrodes  
forming the electrode group being rendered higher than  
the potential of the first electrode section, or the  
potential of the planar electrode being rendered higher  
than the potential of the second electrode section, and  
to switch the order of applying voltage successively to  
the first electrode group.

25 2. The electrostatic actuator mechanism according  
to claim 1, wherein, when voltage is applied to the  
electrode group, the switching circuit applies voltage

simultaneously to at least two electrodes adjacent to each other in the predetermined direction.

3. The electrostatic actuator mechanism according to claim 1, wherein the width in the predetermined  
5 direction of the first electrode section mounted to the movable member is 1.5 to 2.5 times as much as the width in the predetermined direction of each of the electrodes forming the electrode group.

4. The electrostatic actuator mechanism according  
10 to claim 1, further comprising a dielectric film formed to cover the electrode group.

5. The electrostatic actuator mechanism according to claim 4, further comprising a circuit configured to  
15 impair a potential difference such that the potential of the electrode group is rendered lower than the potential of the first electrode section, when voltage is applied to the planar electrode.

6. The electrostatic actuator mechanism according to claim 1, further comprising a dielectric film formed  
20 to cover the first electrode section.

7. The electrostatic actuator mechanism according to claim 6, further comprising a circuit configured to  
25 impair a potential difference such that the potential of the electrode group is rendered lower than the potential of the first electrode section, when voltage is applied to the planar electrode.

8. The electrostatic actuator mechanism according

to claim 6, wherein the first and second electrode sections bear substantially the ground potential.

9. The electrostatic actuator mechanism according to claim 1, wherein the movable member further  
5 comprises an optical element that is driven together with the movable member.

10. The electrostatic actuator mechanism according to claim 1, wherein the first and second stators comprise stoppers projecting from the upper surfaces of  
10 the electrode group and the planar electrode, and the movable member is provided with regions in which the stoppers are slid, the region being formed on the surfaces on which the first and second electrode sections are formed.

15 11. The electrostatic actuator mechanism according to claim 1, wherein the movable member comprises stoppers projecting from the surfaces of the first and second electrode sections, and the first and second stators are provided with regions in which the stoppers  
20 are slid, the regions being formed on the surfaces on which the electrode group and the planar electrode are formed.

25 12. The electrostatic actuator mechanism according to claim 1, wherein the electrode group includes three electrodes to which voltage is applied in a different order.

13. The electrostatic actuator mechanism according

to claim 1, wherein the electrode group includes four electrodes to which voltage is applied in a different order.

14. A method of driving an electrostatic actuator mechanism including a first stator having an electrode group including at least three electrodes successively arranged in a predetermined direction, voltage being applied to the electrodes in different order, a second stator arranged to face the first stator and having a planar electrode extending in the predetermined direction, and a movable member arranged between the first stator and the second stator and having a first electrode section facing the electrode group and a second electrode section facing the planar electrode, the method comprising:

applying voltage to the electrode group, the potential of any of the electrodes forming the electrode group being rendered higher than the potential of the first electrode section;

applying voltage to the planar electrode, the potential of the planar electrode being rendered higher than that of the second electrode section;

applying voltage by switching the electrode of the first electrode group such that the potential of the switched electrode is rendered higher than the potential of first electrode section;

applying voltage such that the potential of the

planar electrode is rendered higher than the potential of the second electrode section; and

repeating the voltage application defined above.

15        15. The method of driving an electrostatic actuator mechanism according to claim 14, wherein, when voltage is applied to the electrode group, voltage is applied simultaneously to at least two electrodes adjacent to each other in the predetermined direction.

10        16. The method of driving an electrostatic actuator mechanism according to claim 14, wherein, when voltage is applied to the planar electrode, a potential difference is imparted such that the potential of the first electrode group is rendered lower than the potential of the first electrode section.

15        17. A camera module, comprising:

a image pick-up element; and

an electrostatic actuator mechanism mounted to the image pick-up element, the electrostatic actuator mechanism including;

20                a first stator provided with an electrode group including at least three electrodes successively arranged in a predetermined direction, voltage being applied to the electrodes in different order,

25                a second stator arranged to face the first stator and provided with a planar second electrode extending in the predetermined

direction,

a movable member arranged between the first stator and the second stator, and provided with a first electrode section facing the electrode group, a second electrode section facing the planar electrode, and an optical element configured to form an optical image on the image pick-up element, and

a switching circuit configured to apply voltage alternately to the electrode group and the planar electrode, the potential of any of the electrodes forming the electrode group being rendered higher than the potential of the first electrode section, or the potential of the planar electrode being rendered higher than the potential of the second electrode section, and to switch the order of applying voltage successively to the electrode group.

18. The camera module according to claim 17, wherein the switching circuit simultaneously applies voltage to at least two electrodes adjacent to each other in the predetermined direction, when voltage is applied to the electrode group.

19. The camera module according to claim 17, wherein the width in the predetermined direction of the first electrode section mounted to the movable member is 1.5 to 2.5 times as much as the width in the

predetermined direction of each of the electrodes forming the electrode group.

20. The camera module according to claim 17,  
further comprising a dielectric film formed to cover  
5 the electrode group.

21. The camera module according to claim 20,  
further comprising a circuit configured to impair a  
potential difference such that the potential of the  
electrode group is rendered lower than the potential of  
10 the first electrode section, when voltage is applied to  
the planar electrode.

22. The camera module according to claim 17,  
further comprising a dielectric film formed to cover  
the first electrode section.

15 23. The camera module according to claim 22,  
further comprising a circuit configured to impair a  
potential difference such that the potential of the  
electrode group is rendered lower than the potential of  
the first electrode section, when voltage is applied to  
20 the planar electrode.